identified six major tasks (see table, page 7), which were matrixed against who had primary, secondary, and tertiary responsibility for each. Primary responsibility for half the tasks lay with local labor or coalition forces, not with the REF.

Based on this analysis, engineer force requirements included one vertical platoon to accomplish force protection and base camp repair tasks, and two horizontal platoons to complete countermine operations, airfield maintenance, and all-weather and dry-season MSR maintenance. This force could be best provided by a CSE Company augmented with a combat heavy vertical platoon. The 63rd and a platoon from B Company, 43rd, remained in theater as the residual engineer force. The 63rd was attached to the JTF Support Command to maintain the infrastructure necessary for continued logistical support to the coalition forces in theater.

Conclusion

Operation Restore Hope, a historic undertaking for the U.S. armed forces, may be typical of the military's mission in the post cold-war era. The deployment was a unique opportunity for the soldiers of the 36th Engineer Group, joint, and combined forces to make a difference in a country desperate for assistance. By constructing roads, base camps, and airfields in Somalia, engineer units continued a legacy of providing assistance to nations throughout the world.

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Determining the Engineer End State

By Colonel Robert Flowers

"It is hard to get there if you don't know where you are going."

A Wise Man

One of the most difficult tasks facing a tactical commander deployed in a contingency operation is to envision the end state his force must achieve in order to accomplish the mission. In combat operations such as Operation Desert Storm, the destruction of the enemy's force or controlling specified terrain may be key indicators of success and victory. In operations with less clear objectives, such as Operation Restore Hope in Somalia, gaining a clear vision of the objective end state is significantly more difficult. This article describes the process the Joint Task Force (JTF) used to define the engineer end state for coalition forces and to assist the commander in developing his operational end state.

The austerity of the theater's infrastructure drove the operations tempo for JTF Somalia. The country lacked nearly everything. There was no civil government. Basic utilities such as water and electricity were nonexistent. Seaports, roads, and airfields were severely limited in capability and were in serious disrepair. Buildings of all kinds were rubbled, bullet-ridden, vandalized, and in most cases had no roofs. Such problems meant the engineer mission would be extensive. Further, the mission would be oriented to providing mobility and sustainment engineering operations in support of the JTF's employment in country, self-sustainment, and humanitarian relief efforts.

For engineers, an end state had to be defined in terms of the amount of work to be done and the construction standards to be met. To gain a vision of the engineer end state, the JTF engineer staff coordinated fully with other JTF staff sections and developed several options for theater engineer operations. The J2 staff and the engineers jointly analyzed intelligence on the condition of the infrastructure and the security situation. They obtained the commander's intent and the concept of the operation from the J3, both verbally and through the basic operations order. The J4 provided planned main supply routes. Available resources such as engineer soldiers, construction materials, and civilian contract construction support were also carefully considered.

End State Options
(Construction Standards)

Option	Facilities	Date	Mission Supply Routes
1	Tents with wooden floors Field latrines	1 Feb	Emergency repairs only Passable - one way
2	Strongback admin tents Showers Austere kitchens	15 Feb	Two-way traffic
3	All strongback tents Mess facilities Maintenance area	7 Mar	Subbase stabilization Some drainage
4	SEA hut admin areas Laundry facilities Water wells Maintenance hardstands Food storage (tents)	1 Apr	Grading, shaping Drainage
5	All SEA huts K-Span food storage	15 May	All-weather, Class 30 at 35 mph

Various assumptions were made to fill the void where facts were not available. The first assumption was that all seaport engineer construction or repair operations would be executed by a civilian contractor. The second was that, at a minimum, a C130-capable airfield would be required at the hub of each of eight humanitarian support sectors. They would provide initial support and, later, contingency support to coalition force sustainment and humanitarian relief operations. The third assumption was that some slippage of engineer units arriving in theater would occur due to competing priorities for the limited airports and seaports. The fourth assumption (but definitely not of least importance) was that sufficient construction materials would be available to accomplish the mission.

Based on thorough staff coordination and determination of the facts and assumptions, the JTF engineer staff developed details for each option. These details focused on the amount of work to be done, the construction standards to be met, the engineer units required to do the work, and the time it would take to execute each option. Before briefing the JTF commander for a decision, the engineer staff briefed the commander of each subordinate component (U.S. Army, Air Force, Marine, and coalition partners) to gain feedback and concurrence. This coordination was instrumental in gaining a decision from the JTF commander because the components were now organic to and had a vested interest in developing the plan.

Having the components' feedback and concurrence, the JTF commander was briefed on the five options (see chart). He selected option 2 with minor modifications and published a fragmentary order directing its implementation. The components, already directly involved in the plan and now having an end state to reach, set to executing the plan. Minor variations occurred because the arrival dates of some engineer units and construction materials slipped, but the mission was accomplished successfully.

Commanders of contingency forces will often need help creating a vision of their end state. Engineer commanders and staff officers have the obligation, not to mention the interest, to ensure that senior commanders understand the engineer implications associated with the mission. Engineers must be proactive in showcasing potential engineer end states to help their commanders focus on the operational end state.

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